



THOMAS G. NEWMAN,
EDITOR.

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We have Received a copy of the "Report on Agricultural Colleges and Experimental Farm Stations, with suggestions relating to experimental agriculture in Canada, by Prof. Wm. Saunders, F.R.S.C." It is quite an exhaustive report, and shows that Canada is alive to the proper means of education, in the department of agriculture.

Dr. Miller's New Bee-Book is now published, and all orders already received will be filled before this paper is in the hands of its readers. A glance at the index, which covers six pages, will reveal the great number of subjects which the Doctor discusses. The book is printed on nice paper, and is bound in cloth, and makes a nice volume. It can be obtained at this office for 75 cents, postpaid.

Dakota.—The second annual Territorial Fair will be held under the auspices of the Dakota Board of Agriculture, at Huron, Sept. 6 to 10, 1886. Fifteen thousand dollars in premiums will be offered; \$350 in cash for the best county exhibits. Reduced railroad rates on all railroads. Free transportation for stock and exhibits. Premium list will be ready June 1. It can be obtained of W. F. T. Bushnell, Secretary, Huron, Dak.

A Success at Last, says Mrs. L. Harrison, in the *Prairie Farmer*, is the heading of a circular now upon my desk, describing a "simple device, which is a complete protection to bees against the ravages of the bee-moth. It is a simple attachment to the platforms upon which the hives rest."...I cannot recommend this wonderful piece of mechanism, which is furnished with a tank of water to drown the millers in, but I can put in a word for a trap that I have used for years with success, and is not patented. It is called the Italian Bee. A tea-cupful of them will protect the combs in a hive. The honey produced by these bees seldom becomes infested with their moth, after it is removed from the hive. I should forget these pests entirely if I was not reminded of their presence by the patent catchers.

The First of May.—Mr. W. J. Cullinan, Mt. Sterling, Ills., send us the following, on the "May Day":

The oriole is carolling
Its sweetest songs to-day,
The blue-bird in the elm-tree
Now trills its softest lay.

The partridge drums, perched on the fence,
In solemn cadence low;
The bees are busy 'mong the flow'rs,
A-humming to and fro.

The lambs are sporting merrily
On yonder hill-slope there,
While flights of songsters, cheerily
Sing, gamb'ling through the air!

Sounds like these one loves to hear,
They fill the soul with mirth;
They drive away dull thoughts of care—
Their glory is their worth.

But the sweetest sound with pleasure
fraught,

That I have heard to-day,
Is a sound mine ear but now up-caught—
"This is the first of May!"

Mr. Bohn, who has been sued by the raisin growers of California, has met with another calamity. Concerning it Mr. M. Segars, of San Bernardino, writes as follows:

Mr. B. has recently lost one of his apiaries—about 200 colonies—by fire. The insurance agent informed me that it was purely a case of incendiarism, as rain fell the night before, and green grass was growing between the rows of hives. It is generally believed to be a new method adopted by one or more fruit-men to decide the case of bees vs. fruit. An effort by fruit-men is being made to convey the impression that Mr. Bohn burned his bees to obtain the insurance money. This cannot be considered for a moment in view of the fact that we are on the threshold of a bountiful crop, having had timely and abundant rains, and that the bees were insured for only \$3 per hive. No bee-keeper having such grade of bees, and in such condition, would think of selling at this price. It is hard to predict to what extent the bee-industry will suffer by want of zeal in the defense of this case.

The case is to come on this month, and though the bee-keepers of California do not seem to be alive to their interests, we have aided them to vigorously prosecute the case.

The Illustrated Australian Bee-Manual, and complete guide to modern bee-culture in the Southern Hemisphere, by Isaac Hopkins, Matamata, Auckland, New Zealand, is the title of a book on our desk. It contains 336 pages, and covers the entire ground of modern bee-keeping. We have had no time to examine the contents of the book, but will publish a review in a future number.

Through Mr. Hopkins we learn that the past season has been a very fair one throughout New Zealand, for bee-keepers. He estimates the honey crop of that island at over 300 tons. With such a prospect it is no wonder that Mr. Hopkins has issued such a good bee-manual.

Let No One be Deceived by supposing that the bees are gathering "lots of honey," because they have noticed a few of "the flowers that bloom in the spring." The "perfect sea of bloom," with "the genial sunshine," will entice the bees and tell a better story!

A Good Place to Stop.—Many of our subscribers complain of the tiresome discussions on the Reversible Hive that have been given a place in the BEE JOURNAL during the past three months.

As a "new system of management" in bee-keeping, it was perfectly proper and desirable to discuss it thoroughly in our columns, but it has now come to a discussion about the hive, the validity of the patent, and matters only appropriate in the advertising columns of bee-papers. Here are two samples of many letters which we have received. A subscriber from Louisiana sends us this question:

Do you not think that the columns of the AMERICAN BEE JOURNAL are getting pretty well used up for advertising Heddon's hive? We have no objection to Heddon's new ideas, but give us something else than those long discussions of no interest to the majority.

Another, from Michigan, sends us this query:

Is the Heddon hive controversy the best thing with which to occupy so much space in the BEE JOURNAL? While I do not object to the new hive, I am quite well satisfied with the Langstroth, and want to read in the BEE JOURNAL something besides discussions concerning the validity of somebody's patent. If Mr. Heddon wants to advertise his hive, let him do so in the advertising columns; and if any one wishes to oppose him, let him advertise a better hive in the same department, and relegate all questions on the validity of the patent to the United States courts. At all events, give us something else in the reading columns of the BEE JOURNAL.

We have now arrived at a good place to stop. Mr. H. is entitled to reply to questions and criticisms, and in this week's issue, he has replied to them, and now we will dismiss the subject.

We have a lot of articles on hand discussing different points of the hive controversy—but to publish them will but prolong the unprofitable discussion, and disgust our readers. If the writers of these articles desire it, we will return them—if not, we will dump them into the convenient wastebasket.

We have endeavored to control the controversy—to pour oil on "the troubled waters" of contention, but when men become excited and engaged in "heated controversy" they are not easily controlled or soothed. Enough has been said to give bee-keepers a good idea of the invention and "new system of management," and now we may safely talk of other and more important matters.

New Price-Lists have been received from the following persons:

J. B. Hains, Bedford, O.—8 pages—Aplarian Supplies, Bees and Queens.

A. J. & E. Hatfield, South Bend, Ind.—8 pages—Bees and Supplies for the Apilary.

Ihring & Fahrenholtz, Berlin, Germany.—12 pages—Manufacturers of Comb Foundation Presses, etc.

Any one desiring a copy of either of them, can obtain it by sending a postal card to the address as given above.

Do Not Divide Colonies until after they are strong in numbers and have commenced preparations for swarming, and then only with caution. Too many colonies are divided to death.



WITH

REPLIES by Prominent Apiarists.

When to Unite Weak Colonies.

Query, No. 246.—Is it better to unite weak colonies early in the season, or just before the white clover blooms?—W. S.

Early in the season.—H. D. CUTTING.

Just before white clover, according to my experience.—G. M. DOOLITTLE.

Here, where we have basswood and autumn flowers, it is best never to unite them.—JAMES HEDDON.

I would unite them early. Two weak colonies united will sometimes "pull through;" if left alone they may die.—W. Z. HUTCHINSON.

Generally I should not unite them, but if I did, the earlier the better.—C. C. MILLER.

The spring uniting of weak colonies is a mistake, unless they are entirely worthless or queenless, or unless there are already too many in the apiary.—DADANT & SON.

It is better to unite weak colonies just at the beginning of the honey season—unless they are too weak to build up, and are likely to perish, in which case unite early to avoid robbing.—H. R. BOARDMAN.

I think by stimulation, close packing on few frames, and giving capped brood from the strong to the weak colonies, we may succeed without uniting them. If we have more colonies than we wish, we may unite them, which I should do at once.—A. J. COOK.

It is better to unite early. Be sure to cage one of the queens, but if one of the colonies is queenless it is not necessary. Place them near each other, and shake off all the bees from the combs of the queenless colony, and take away with the hive. They will unite without trouble, but it is best to look after the queen, if not caged, in a half hour.—G. L. TINKER.

It does not pay me to unite weak colonies in the spring. I prefer to build them up, even though they are mere nuclei. I can build up nuclei and get a fair crop of honey from them if they only fill one space between the combs the first of April. I now have a few such nuclei, and every night the hives are wrapped up with burlap, which is removed in the daytime. If I united colonies at all, it would be about 10 days before white clover bloomed.—G. W. DEMAREE.

I do not believe in uniting weak colonies at all, unless one is queenless. It is far better to build them up to full strength by drawing on other colonies that can spare a frame of

brood occasionally. Of course if you have but 2 colonies, and both very weak, they may be united in order to save them. In such case use the best queen.—J. E. POND, JR.

Stimulative Feeding of Bees.

Query, No. 247.—1. Will it do to feed bees in order to stimulate them, if the weather is too cold for them to fly? 2. Will feeding amount to anything if they have an abundance in their hives? 3. Will it stimulate the bees to uncap honey already in the hive.—G. W. M.

1. No. 2. It will do some good, if fed very sparingly, but we would not advise it. 3. Yes, beyond a doubt, this is the best spring stimulant.—DADANT & SON.

1. I should not approve of the course. 2. Feeding is a greater stimulus to breeding than an abundance of stores in the hive. 3. Yes.—W. Z. HUTCHINSON.

1. Yes, certainly. 2. It certainly will, or does, in our apiary. 3. Yes, and it is as well as feeding, I think.—A. J. COOK.

1. Yes, if they have no stores; otherwise it is not advisable. 2. Not in my experience. 3. Yes, and I deem it the very best method that can be adopted.—J. E. POND, JR.

1. Such feeding is not necessary, in my opinion. 2. I think not. 3. To a certain extent, but one warm day with new pollen is better than a week of all other kinds of stimulation.—G. M. DOOLITTLE.

1. I would rather not feed them unless there was danger of starving. 2. In case the queen does not lay well, feeding may urge her, but I do not generally find it necessary. 3. It is probably as good as feeding.—C. C. MILLER.

1. They may be fed if it is done judiciously, and with the right kind of feed, without serious results even if the weather is too cold for them to fly out. 2. It increases brood-rearing. 3. If fed in small quantities only to stimulate—yes.—H. R. BOARDMAN.

1. It will not do for me. 2. I am sure it is unprofitable to feed bees that have an abundance of stores. 3. Yes. I discovered this many years ago when transferring bees. Still my bees breed up as fast as they ought to, if they have plenty of sealed stores.—G. W. DEMAREE.

1. No. 2. Not with healthy colonies in fair numbers. 3. It will save their uncapping it, and aid them in their work of removal to a point near the brood, but if there are plenty of bees to do it, they will get the honey as fast as they can use it—if it is only there to get, or in the flowers.—G. L. TINKER.

1. Yes, it will do if you think it will be of any benefit. 2. Not if they are in good condition. 3. I think not. If your bees are in good to fair condi-

tion let them alone and you will be just as far ahead when the proper time arrives.—H. D. CUTTING.

My queens will, without any feeding, always breed as fast in the spring as the temperature will admit of. Heat is where the lack is, and after many trials I have abandoned stimulative feeding.—JAMES HEDDON.

Honey and Beeswax Market.

Office of the AMERICAN BEE JOURNAL,
Monday, 10 a. m., May 3, 1886.

The following are the latest quotations for honey and beeswax received up to this hour:

CHICAGO.

HONEY.—Comb is coming forward more freely and prices now are 15¢ to 16¢ for 1-lb. sections. Extracted is in light demand at 5¢ to 7¢. California comb honey, in 2-lb. sections, 9¢ to 12¢.

BEESWAX.—23¢ to 24¢ per lb. Not much offered. R. A. BURNETT, 161 South Water st.

NEW YORK.

HONEY.—We now quote: Fancy white comb in 1-lb. sections, 12¢ to 13¢; in 2-lb. sections, 9¢ to 10¢. Fancy buckwheat honey in 1-lb. sections, 9¢; in 2-lb. sections, 7¢ to 8¢. Off grades 1¢ to 2¢ per lb. less. Extracted, white, 6¢ to 7¢; buckwheat, 5¢ to 6¢. California, 5¢ to 6¢; Southern, as to color and flavor, per gallon, 50¢ to 60¢.

BEESWAX.—27¢ to 28¢.

MCCAUL & HILDRETH BROS., 34 Hudson St.

BOSTON.

HONEY.—One-lb. sections, white clover, 13¢ to 15¢; 2-pound sections, 11¢ to 13¢. Extracted, 6¢ to 8¢.

BEESWAX.—25¢ per lb.

BLAKE & RIPLEY, 57 Chatham Street.

SAN FRANCISCO.

HONEY.—White and ex. white comb, 11¢ to 13¢; dark comb, 8¢ to 9¢. White extracted, 5¢ to 6¢; amber, 4¢ to 5¢; dark and candied, 3¢ to 4¢.

BEESWAX.—Quotable at 20¢ to 23¢, wholesale.

O. B. SMITH & Co., 423 Front Street.

DETROIT.

HONEY.—The market is almost bare of comb honey, and very little is wanted. Best white in 1-lb. sections 14¢.

BEESWAX.—Scarce at 25¢.

M. H. HUNT, Bell Branch, Mich.

ST. LOUIS.

HONEY.—Choice comb, 10¢ to 12¢. Strained, in barrels, 4¢ to 5¢. Extra fancy of bright color and in No. 1 packages, 4¢ advance on above prices. Extracted in barrels, 5¢ to 6¢.

BEESWAX.—Firm at 21¢ for prime.

D. G. TUTT & Co., Commercial St.

CINCINNATI.

HONEY.—Trade is perhaps duller than usual. We quote: Extracted honey, brings 4¢ to 5¢, and choice comb honey brings 12¢ to 15¢ in a jobbing way.

BEESWAX.—In demand at 20¢ to 25¢ for yellow.

C. F. MUTH & SON, Freeman & Central Ave.

CLEVELAND.

HONEY.—One pound sections, 14¢ to 15¢; 2-lb. 13¢.

Extracted, 7¢ to 8¢.

BEESWAX.—Scarce at 25¢.

A. C. KENDAL, 115 Ontario Street.

KANSAS CITY.

HONEY.—Sales of comb are good, while extracted is very dull and low. One-pound sections are scarce; stocks of all other grades are well supplied. Calif. 2-lb. bring 11¢ to 12¢; Eastern 2-lb., 12¢ to 13¢; 1-lb., white, 14¢ to 15¢; dark, 12¢ to 13¢. Extracted, 5¢ to 6¢; Southern, 3¢ to 4¢.

BEESWAX.—23¢.

CLEMONS, CLOON & Co., cor. 4th & Walnut.

MILWAUKEE.

HONEY.—The receipts of honey have been more liberal of late, and the supply is now very fair. We quote: Choice comb, in 1-lb. sections, 17¢ to 18¢; in 2-lb., 16¢ to 17¢. Extracted, white, in kegs or tin, 7¢ to 8¢; dark, in the same, 6¢ to 7¢.

BEESWAX.—Demand moderate at 25¢.

A. V. BISHOP, 142 W. Water St.

Preserve your papers for reference.

If you have no **BINDER** we will mail you one for 75 cents, or you can have one **FREE** if you will send us 4 new yearly subscriptions for the **BEE JOURNAL**.



Explanatory.—The figures BEFORE the names indicate the number of years that the person has kept bees. Those AFTER, show the number of colonies the writer had in the previous spring and fall, or fall and spring, as the time of the year may require.

This mark indicates that the apiarist is located near the centre of the State named: north of the centre; south; east; west; and this northeast; northwest; southeast; and southwest of the centre of the State mentioned.

For the American Bee Journal.

Sections—Difference in Colonies.

G. M. DOOLITTLE.

Not long since I chanced to see these words in one of the bee-papers: "In the fall, after extracting sections when re-casing the sections of empty combs, (as we use no separators), the combs are not always perfect in the frames; when we find one side a little fuller than the other, we put the two full sides together, and the hollowing sides together. No matter if the full sides of the comb should touch each other, when the bees begin operations the following season they will cut right through, building out the other sides equally, and the occasional crooked ones are thus made straight."

Upon reading the above I began to wonder if the writer had ever practiced the plan given, and, if so, how it could be that his experience was so much different than mine had been when trying the same plan. In every case where I ever put two combs in sections, or brood-combs even, so that they touched each other, I have found that the bees always left little bridges of comb from one comb to the other, so that when the combs were pulled apart the capping to one or both combs was broken, thus setting the honey to running and making the sections unsalable, unless put back on the hive for the bees to re-cap the cells. In so doing the bees nearly always remove all the honey out of these damaged cells, so that the whole process requires nearly $\frac{1}{2}$ as long as it does to fill a section from the start. This causes a great waste of time to the colony, for they are thus kept fussing over a bad job instead of doing new work.

My plan has been to place such crooked combs at the top of a warm room on a piece of canvas until thoroughly warmed through, when the combs can be bent and straightened to the perfect satisfaction of the operator. If any of the cells jut out too far they are shaved off with the uncapping knife. In this way I have a surer thing of it, and as the work is performed in the winter it is much more cheaply done than in

having the bees make a "botch job" of it in the summer.

In another paper I find these words: "Colonies are exactly alike, so near as we can discover, and yet one colony yields an excellent surplus, another none. Why is it?" Here is a question that used to greatly bother me, for I formerly was troubled in the same way, but of late years I have succeeded in making each colony produce nearly like results; i. e., if one colony contains 40,000 bees and produces 100 lbs. of honey, I get about that amount from every colony containing that number of bees; while one having but 20,000 bees gives a yield of 50 lbs.

After careful study I found that colonies which I pronounced "exactly alike" on June 1, would not be so at the time the honey harvest was at its best. The trouble was that I did not have a thorough knowledge regarding the working-force of my bees at all times, nor of the interior of the hive. For instance, the colony which I called my best on June 1, might become one of the poorest by July 10, at which time the honey harvest arrived. This, as a rule, would be owing to a failing queen, as I have often noticed that a colony which wintered extremely well and goes to breeding rapidly in early spring, does not equal one that wintered rather poorly, but commences brood-rearing in earnest about May 25. The reason is that by about June 10th the queen in the stronger one ceases to be as prolific as the other, and this allows the bees to put the first honey coming in into the brood-combs, rather than forcing it into the sections, as does the other through her extra prolificness later on.

I have often noticed if the bees are allowed to get the start of the queen so as to store much honey in the brood-chamber during the first of the honey harvest, that colony will be an unprofitable one. The remedy is to give each colony only as many combs as the queen will keep occupied with brood, and when a colony is found having a failing queen, either give another queen or remove a part of the brood-combs.

Again, the giving of a colony a large amount of surplus room to start with has a tendency to make the colony an unprofitable one, which has not a force of bees large enough to occupy the whole of the surplus department at once. They seem to become discouraged, and instead of taking possession of a part of it, they will often cluster outside, and crowd the brood out with honey, never entering the sections at all. I usually give only surplus room to the amount of 15 to 20 lbs., and a part of this space has combs in it left over from the season previous, thereby coaxing the bees into the sections with the first load of new honey. In a week, more room is given, and so I continue to give surplus room as needed. In this way I always receive a good yield from all. It is the attending to the little items in bee-culture that gives success.

Borodino, © N. Y.

Official Report of U. S. Entomologist.

Artificial Fertilization of Queen-Bees.

N. W. M'LAIN.

Since I began this work I have given much thought and labor to experiments in methods of artificial fertilization. No other branch of apicultural experiment possesses the same scientific interest or practical value to the industry of bee-keeping.

Ever since the art of bee-keeping began to be practiced upon scientific principles, the value of exact knowledge and perfect control of the process of fecundation has been recognized. In 1846 an able German apiarist wrote: "If it were possible to ascertain the reproductive process of bees with as much certainty as that of our domestic animals, bee-culture might unquestionably be pursued with positive assurance of profit, and would assume a high rank among the various branches of rural economy." And in a current number of one of the most progressive bee-periodicals, a prominent writer on apiculture says: "The apiarist who finds out a sure, safe, and certain method of controlling fecundation as it is controlled in the animal kingdom, will confer a great and lasting blessing upon bee-keepers, and be the means of advancing the profession a long way toward perfection." Realizing the difficulties to be overcome, there was little encouragement to expect success. However, all progress "is usually the slow out-growth of repeated trials," and "failures precede successes." Various methods and expedients have been adopted for securing the fertilization of queens in confinement, none of which have proved satisfactory.

During the past two years reference has occasionally been made in apicultural papers to a process of fecundating queens while in the larva and pupa or nymph stage of development, by crushing a drone larva upon the queen larva, or by opening the cell and introducing crushed drone larva upon the nymph queen. In a few instances experimenters have reported that the practice has been successful, and that queens thus treated have begun laying fecundated eggs in from one to two days after leaving the cell. In each of the reported cases some important fact in the evidence tending to establish the genuineness of the claim to success seems to have been wanting or doubtful. In consequence, these reports have been received with reserve and often with ridicule.

For putting these claims to the test, I caused a number of queen-cells to be built, and just before the cells were capped I squeezed the contents of the generative organs of nymph drones upon the larval queens. The bees removed the larvæ and destroyed the cells. After other queen-cells were capped I opened them by making a horizontal incision at the base of the cells, and another at right angles down the side of the cell, and laid back a part of the side, exposing the queen pupa. Through the opening in the cell I squeezed the liquid

contents of the generative organs of imago drones upon the pupa queens. The sides of the cells were then replaced and sealed with melted beeswax and resin. These cells were placed in nursery cages and hatched in queenless nuclei colonies. These queens were liberated in nuclei colonies after their wings were clipped. Upon being hatched they resembled fecundated laying queens more than virgin queens. The treatment they received from the bees and their action upon the combs was that of fecundated rather than that of virgin queens. Repeated experiments, however, failed to produce a queen capable of laying fecundated eggs. Still, the fact that the treatment given the embryo queens had to such an extent changed their physiological characteristics was suggestive. From the analogy between the animal and vegetable kingdom, where ripe seed is known to grow better than unripe, it seemed more than probable that the contents of the generative organs of a mature drone would have more virility than those of a drone larva or pupa.

That the active principle in the fluid contained in the procreative organs of the drones attains a degree of activity at a very early stage in their development, is evident from the effect produced by exposing the larval queens to its influence. Continuing the experiment I caused more queen cells to be built. Removing the testes and seminal sac from mature drones with a pair of pliers, the contents were pressed upon the larval queens. The bees removed the uncapped larvae as before. Most of the pupa queens so treated and placed in nursery cages for hatching died in the cell after assuming the imago state and after being partly colored. I hope to be able yet to discover what principles and practice are essential to success, which seems possible, for many possible opportunities remain untried. While possessing possibilities of the greatest interest and value to the embryologist and entomologist, it is doubtful whether a demonstrated method of what may be called parthenogenetical fecundation would possess the essentials of certainty and permanence in such a degree as to make the method serviceable to beekeepers. It remains to be tried whether a sufficient number of active spermatozoa may be received into the spermatheca of queens while in the larva, pupa or imago state to render them serviceable for any practicable purpose, even if some of the reported successes were true. Failing to succeed by these methods it appears more reasonable that the best time to fecundate a queen is when she wants to be fecundated, or when orgasm appears. Orgasm takes place in from five to seven days, usually in five days after the queen leaves the cell, and continues for eight or ten days, and a few instances are reported where queens have been fertilized as late as twenty-three days after leaving the cell.

When orgasm takes place the generative organs of the queen are highly

excited and much distended. I confined a queenless colony in their hive and gave them a queen-cell which had not been disturbed while maturing, and allowed the queen to hatch. When the virgin queen was six days old orgasm occurred, and on the evening of the seventh day I removed her from the hive and placed drops of the male sperm upon the open vulva as she was held, back downwards, by gently grasping the thorax between the thumb and forefinger. The instant the male sperm was pressed from the testes and seminal sac of a mature drone upon the excited and distended vulva, it was curious to observe the effect. The action of the abdomen and vulva resembled that of young birds while being fed. There was the reaching up after the seminal fluid, and an action of the parts resembling the opening of the mouth and swallowing food. As much seminal fluid as could be obtained, by the imperfect method employed, from three or four drones, was utilized and readily absorbed by the queen, after which her wing was clipped and she was dropped on a frame covered with bees and returned to the hive and the bees were liberated. Up to this time her appearance and action was that of a virgin queen. The next morning, 12 hours after exposure to the seminal fluid, her abdomen was distended and her appearance and action in all respects was that common to fertile, laying queens. She was moving about slowly over the combs and peering into the cells, and 24 hours afterward she had 400 or 500 eggs in worker cells. I watched the development of larvae from those eggs. In due time worker larvae appeared, and at this date, November 13, worker bees in considerable numbers are being hatched. I then reared two queens from the eggs laid by this artificially fecundated queen, in queenless colonies, and as soon as they were hatched I clipped their wings, and when orgasm appeared they were treated as before described, and in three days one laid a few eggs in worker cells. The other has the appearance and action of a fertile queen, but has laid no eggs, and the lateness of the season forbids advantageous continuance of the experiments.

Fully realizing the necessity for exactness and certainty in all details, before tabulating the results of any method so revolutionary, I have endeavored to effectually guard against all possibility of the test being abortive. Instances have been reported where fecundation had taken place in the hive; but as many examinations proved that there were no drones in these hives, and judging from the lateness of the season and severity of the weather, probably none in the country, except a few which had been preserved in a queenless nucleus colony by frequently feeding the bees and confining them in the hive, and from the further fact that the experiments were conducted when few bees at any time attempted to leave the hive, and from the fact that these queens' wings were clipped

when they were removed from the nursery cage, we can confidently assert that fecundation by the natural method did not take place. These later experiments in fecundation have been conducted through the months of October and November, during the prevalence of most unpropitious weather, and those acquainted with the habits and instinct of bees will understand the difficulties under which I have had to labor. With the return of spring and the advantageous conditions attending the normal season for breeding, and after discovering and adopting better methods and devices for appropriating and depositing the seminal fluid, I am hopeful that the fecundation of queen bees may be controlled with the same ease and certainty as fecundation is regulated among all domestic animals, and that the pedigree of the breeding stock in the apiary will be as readily traced and as highly valued as is the recorded pedigree of the illustrious scions of the turf, and the aristocratic families of the American Herd Book.

I regret that the lateness of the season prevents the further continuance of these tests now, as I fully appreciate the necessity of placing the evidence in support of the facts set forth on the incontestable basis of continued and often repeated successes, and not upon the success obtained in two individual cases. However, the fact that I have succeeded in producing queen bees of two generations which have by artificial means been made to perform the normal functions of naturally fecundated queens, seems to furnish ground to hope that this subject has passed from the plane of experiment to the position of practicability. Other methods for controlling fecundation also remain to be tested.

U. S. Apicultural Sta., Aurora, Ill.

For the American Bee Journal

Experiments in Wintering Bees.

MAHALA B. CHADDOCK.

I examined my bees yesterday, took off the chaff boxes and cleaned out the Gallup hives, and unpacked the Simplicities. I stated last autumn that I was going to experiment a little. I filled one Simplicity hive with oats chaff packed in solid, put another hive on it with five frames of brood in the middle and division-boards on each side; then another hive on top of that with 5 frames filled solid with honey in the center just over the brood-nest, and division-boards on each side corresponding with those below. I covered the top with Indian-head muslin, and filled in at the sides and on top with chaff. I told them to hibernate, and did not touch them again until now.

I built up four of these monuments. Of course the middle hive—the one containing the brood-nest—had an entrance cut for the bees to go out. When I opened them I found the brood in the upper story of three of

them, and they had built large pieces of comb between the combs and all was full of sealed brood, except the sides next to the division-boards, and everything was booming.

If I had no other hives, I would say fix them just so every time. My colonies in Gallup hives (that I fixed with no fussing, but nailed a piece of muslin on an empty honey-box filled it with chaff loosely thrown in, and laid four cobs under it, a la Porter), are booming just as much, so what is the use?

Neighbor Phillips' bees, with not a spear of chaff in the honey-boxes, are rushing and roaring just the same. He had the honey boxes, with no honey, on them, and left them on all winter, and he is now ready for the honey harvest without any lifting and lugging around. After the cold weather had set in for good, and everything was snapping and cracking with the cold, he carried a few armfuls of straw and piled on the hives. I want a hive that can be fixed for winter without doing anything to the brood-nest; take off the honey and put on the feather-beds, and no fussing nor backache about it. Who will invent the hive I want?

I clip all my queens' wings when I clean out the hives in the spring, and then let them alone unless they need feeding. I go round between apple bloom and white clover every few days, and lift the hives, and if they feel light I feed at the entrance at dusk, in some feeders that I made out of tin separators that I once used between sections.

Vermont, 40 Ill.

For the American Bee Journal.

Using Comb Foundation.

C. W. DAYTON, (116-115.)

There are two different times when the bees will work upon foundation—one of them is when there is a large amount of honey being stored, and the other is where there is not very much honey to be found—about enough to supply the daily wants of a colony. If we give the foundation when there is a heavy yield of honey, the cells will be drawn out so as to be about $\frac{1}{4}$ of an inch deep, or deep enough to hold honey, and as combs are not so plentiful as honey at such times, the unfinished cells will be filled nearly to the brim with honey which will prevent the bees using the surplus wax in the lower part of the cells. Thus if there is enough wax to construct combs 1 inch in thickness but little more than $\frac{1}{4}$ of it will be economically used.

In working foundation where there is not much honey to be found there is nothing in the way, but if there is more wax than is absolutely required to produce the cells to the depth for brood, it goes to make thick side-walls or "fish-bone," and of course is wasted. I believe it to be the case that when combs are produced to a certain thickness, which thickness

may be varied by conditions, the bees use their own wax. It takes about $7\frac{1}{2}$ square feet of straight, natural comb to contain a pound of wax, and it should require but a trifle more than a pound of foundation to produce $7\frac{1}{2}$ square feet of comb.

That weight of foundation seems to be about right when the bees are not getting much honey, but if the honey-flow is heavy it might be economy in money saved to have it much thinner than that, if it can be kept from falling down.

After using several of the different kinds of comb foundation in the frames at a time, I can see no difference in its acceptance by the bees. Sheets of wax barely showing the prints of the press will often be worked into the nicest of comb, if it does not contain too much wax for the occasion, and then cell-bases could be no advantage. If there is any choice it would be in favor of the molded kind, and then only in regard to strength. This choice would be theoretical, however.

Last season I used in the brood-chamber, 120 pounds of foundation running 8 square feet to the pound, and there was less than 3 pounds to be made over again from being pulled down by the bees, and I did not use wires. Perhaps the best way to fasten unwired foundation in the frames is to place one edge under a thin strip of wood tacked to the under-side of the top-bar. In hiving the swarms upon these frames of foundation, for obvious reasons it is advisable to place the frames as close together as possible or alternate them with combs, which should be placed near together. When a swarm has been hived 5 or 6 hours, the frames may be placed the right distances apart, as the foundation will have reached a comb-like aspect. All things considered, I think that this management is easy, and saves valuable time over that of using wires.

Bradford, 3 Iowa.

For the American Bee Journal.

Replies to Various Criticisms.

JAMES HEDDON.

I ask to be excused for compelled procrastination in replying to Mr. Caldwell. Referring to his first question on page 217, I will say that I have wintered, and propose to winter my colonies in one case of the brood-chamber of my hive. I used under a part, two-inch rims. This experiment was made with but 5 colonies, and it presented favorable results. I am aware that the idea is old. One case of the brood-chamber presents all the comb capacity needed for every purpose for wintering, one of which being to hold sufficient stores to always last from gathering to gathering.

If Mr. Caldwell will carefully read the chapter on the new hive, in my book, he will see that my bees are not in both cases of the brood-chamber, but only one case, at the approach of

the cool weather he speaks of. If Mr. C. has read my articles carefully, as he states in his second paragraph, he must have overlooked my words of caution on page 73, at the bottom of the last column, where I advise not to make haste to cast aside a good hive for a better one.

He also wants to know how much more honey can be taken on an average, from these hives than from the old ones. To this I answer, not a drop more. It is bees, not hives that produce honey. I can get as much honey from a nail-keg, or half-barrel, as from any hive. To do it, I should have to devote my entire attention to one keg, or at least not many kegs, or the attention would not go around. When the keg is nearly full, I would cut out some of the honey-combs, thus giving more room, and so on. But if Mr. Caldwell would ask from what hive I believe I can get the best-filled sections of nicest comb honey, with the least amount of friction and labor, I am prepared to say, from the new invertible, double-brood-chamber hive. As far as the quantity of honey is concerned, that depends upon the secretion of nectar, and number of bees to gather it.

The new hive with complete brood-chamber, has the same brood-comb capacity of 10 standard Langstroth frames, and by interchanging and inverting, we can develop one-half more brood than we get from the same brood-comb capacity in non-invertible frames.

I have read Mr. Dadant's article on page 231. As the term "original" is used in patent parlance, it refers to something not borrowed, whether prior or not. I trust that no one imagines that I had any knowledge of these old, dead tiering-hives, laid aside by our French and German brethren. I have yet failed to see an account of any hive containing two distinct apartments (surplus and brood), where the brood-apartment was divided into two horizontal sections. If Mr. Dadant's article was written for the purpose of showing that past experiments have proven my new hive and system inferior, I will only say that the construction was so ill, that they could not work successfully, and did not contain the functions of my hive, which fact I am willing to rest with future experiments. If, on the other hand, the article is supposed to anticipate my invention, I have only to refer the reader to Section V, page 213, which reads as follows:

"Patent law declares that the fact of abandonment and subsequent adoption of things claimed to be alike, is evidence sufficient to negative that claim."

On page 219 we are again treated to a transfer out of a brood-chamber made in sectional parts. I do not know why these statements are written. Are the writers now anxious to transfer back into the double brood-chamber hives? If they are, will it be true that the hives they then transferred out of (abandoned), will be just like those they will now transfer into (adopt)? What has been going on to produce such inconsistent changes? Whatever can be shown in print, that anticipates my claims

(either patent or honorary), let us see it by all means; but claims that rest with any one's veracity, are not safe guides outside of United States courts, and not then, in many cases. Let him who claims it is in print, furnish it.

I was, some weeks ago, made aware of what Mr. Dadant cites, but that cannot and does not in any sense anticipate any of my claims. My patent claims are outside of it, and my honorary claims to the invention are based upon the fact that I knew no more of these old discarded devices than did Prof. Cook and others, and a dead past can in no way anticipate a living present.

But some may inquire, "Will your new hive live?" I reply—I am willing to leave that to the bee-keepers of to-day. They are testing it. Let us await their decision. "Let the dead bury the dead," and the present test the living.

I have read Mr. Kretchmer's reply on page 265, and I still affirm that I made no mistake in my report of Mr. Kretchmer's patent. The 28th line of his specifications reads thus, as you say, Mr. Editor: "The bottom-board G of the box is permanently attached to the sides." There is nothing double about the brood-chamber. There is no "honey-board," nor "metal strips" with frames resting thereon. Mr. K. says that it is "capable of being inverted." In one sense this is true, and in another it is not. Any hive *might* be inverted, even by the wind. This hive is by no means practically invertible. Wedges will not support frames when inverted, and the bee-spaces would be thrown all out of position. Mr. K's patent plainly states the purpose of these wedges, as follows:

"I insert a wedge-shaped piece of lath for the purpose of closing the crevices between the frames, so as to prevent the bees from depositing their bee-glue between the frames, and to leave no crevice for heat to escape, or where moth might obtain a lodging-place."

The objects sought to gain by the invention are plainly set forth in the specifications, and not one word is said about inverting or interchanging any of the parts of the hive, and no such action is practically possible. The drawings also show that the bottom-board is "permanently attached to the sides"—not to the *side*!

Again I assert that in this patent cited by Mr. Kretchmer, *there is not a single feature in any way anticipating my invention*. There is no double brood-chamber, but one deep one. I would willingly leave the matter to Mr. R. L. Taylor, who is a lawyer, and also a large and expert bee-keeper. I mention him because he is in every way fitted to judge, and was mentioned by Prof. Cook in *Gleanings*.

On page 259, Mr. Editor, I think you do us injustice. I see no just comparison in your "chameleon story." The hive that Mr. K. has just sent you is not evidence in this case. What we demand is some sort of proof that is self-evident, and that is no doubt what is demanded by Messrs. Alves and Cook.

In Mr. Kretchmer's last paragraph, he says that since then he has carefully examined my hive, system and

patent. He should have done this before he wrote. There is hardly a bee-keeper in the country who yet thoroughly and entirely understands all the functions of the hive in question. Mr. K. says "special system" and "particular construction." Let me say to Mr. K. and all, that my invention covers vastly more ground than a single "particular construction" or "special" line of management. A thousand hives might be constructed, all characteristically different, every one of which might infringe my invention.

Two-thirds of all that has been written with a view to uprooting my invention, has really had no bearing upon the subject whatever. In the United States courts we should be compelled to give more or less weight to the sworn statements of witnesses against the novelty of the hive, and that testimony would weigh according to its reasonableness and the integrity of the witness, as can be shown from what he has said and written before; and even then perjury may do injustice; but here, in a bee-paper, nothing amounts to evidence worthy of consideration, except what can be shown in public print.

Dowagiac, 9 Mich.

For the American Bee Journal.

Fertilization of Flowers.

J. F. LATHAM.

As a farewell to the subject I wish the indulgence to inform Mr. S. D. Webster that, in my opinion, his quotation, on page 203, from my article on page 153, embodied an allusion to a living principle in the economy of Nature—a molecular affinity or co-relation of organic entities—a connecting-link between the animal and vegetable species, and the lower the descent in the scale of existence the more prominent it becomes, as evidence of the—*beginning*.

I believe that is a settled conclusion among geologists, that the vegetable species commenced their rounds of development prior to the animal species; and, at the compatible grade of their development, furnished the entities from which the animal races have evolved. But the precise point in the development of cosmic matter at which evolution commenced, is beyond the reach of human investigation. The Great First Cause, like the symbolical fruit of Paradise, is guarded from man's irreverent touch; he can find out the Universal Life-Giver—the Fructifying Power, but not unto perfection. He can see in the phosphorescent glow of the steamer's path, as it dashes through the briny waves, evidence of the existence of the molecules of future entities. He can see in the "jelly-fish," as it floats in the calm waters of the land-locked estuary, maintaining in its movements the impetus imparted to it by the waves of the open sea, an entity from the path of the steamer on a round development. Its food is the elements from which it originated, its organism but a

degree in advance of the vegetable, and its animal functions being but the power of volition, imparting to it but the impetus to maintain existence where the strictly vegetable entity would perish. Divide it into pieces, and each fragment becomes a distinct entity in the sphere of its progenitor. Will not this process of organic growth hold good when applied to the method of development of all the species of animate life which inhabit the great deep?

But, we are not compelled to search the ocean for a manifestation of the Life-power; it is all around us. It permeates the rivers and rills, lakes and ponds as well; and there is scarcely if at all, a vegetable which springs from the earth, but that furnishes support to the infant entities of living, moving forms—future animals and insects. So it is plainly evident that we are not wholly indebted to the testimony of the rocks when seeking to unveil the affinity of animal and vegetable existence—the co-habitation, so to speak, of the positive and negative, or active and passive forces, which represent the propagating agencies, as displayed in the attributes of the universal-spiritual, and universal-material principles; cosmologically unfolded in the vivifying expanding impulses of nature, in endless evolution.

The bees and the breeze may convey the fecundating element from flower to flower, but fructification can be accomplished only when the elemental conditions are susceptible of molecular assimilation. This—as I believe it to be—bottom fact from the occult store-house of Nature, the connection of animal and vegetable life—seems to exercise a more subtle influence in matters pertaining to some of the vital elements of bee-keeping than at first thought it may be supposed to exercise; for had it been properly understood, the "pollen theory" would never have been, and the disciples of the "hibernation theory" would have sought elsewhere than a hollow-tree, for the basic principle evinced in the winter repose of the hive-bee.

I see nothing in Prof. Cook's kindly notice of my article, page 188, original with the Professor, that appears to substantially conflict with my statements. Both tend to the same point. In short, I feel gratified in being sustained by so eminent an authority. But I am not prepared to believe with "all botanists," that gaily variegated, or showy uni-colored petals are assumed by the floral species for the purpose of inducing insects to their banquets of sweets, or stores of pollen for the purpose of accomplishing their fecundation. Chemical constituents produce showy uni-colored petals in the floral species, and hybridizing, or cross-fertilization, will result in variegation. Showy flowers may be more prominent in attractiveness, than plain ones, and thereby "fool" the bees at times, as I think I have observed; but nectar and pollen are the substantial allurements, and the appetite and habits of the insects the prompters of their visits, thereby

enhancing the increase of useful vegetation.
Cumberland, 9 Me.

For the American Bee Journal.

Feeding Sugar to Bees.

H. E. HILL.

"I have seen sugar taken there by the barrel." I think that almost any of those who practice sugar-feeding have heard this remark, and if they have ever attempted to give an explanation as to why and the wherefore of it, they will understand what a task this is, and generally to no purpose.

The teachings of such men as Messrs. Hutchinson, Heddon, Doolittle and others are carefully followed by many. Their writings are eagerly sought after and their suggestions are put into practice at the first available opportunity, and many seem to think, "All I have to do is to follow their plans, and the result will be abundant success." The writer has been no exception to this class, for such writers as these are our teachers. I am sure that any bee-keeper cannot too highly estimate the value of their articles, that contain the results of their experience and practice. But do they not make mistakes sometimes?

For instance: Has Mr. Hutchinson on page 152, given a lesson that will prove beneficial both to bee-keepers and the honey market, or otherwise? Mr. H. says: "If no more sugar should be used for winter stores, or fed for any purpose for 20 years, these same stories would live and be repeated." I do not wish to contradict this statement, for although I believe "those stories" would die out entirely in that length of time, I have no more to prove that such would be the case than Mr. Hutchinson has to prove his assertion. But certainly people could not say as they do now, "I have seen, etc.," which seems to be the backbone of the falsehoods in circulation at present.

Farther on in his article, Mr. H. says: "The sugar fed to bees is not a drop in the bucket, so far as the sugar market is concerned." I do not think that anybody has intimated that the sugar market would be built up simply by the sugar consumed by the bees, although the hundreds of barrels used annually certainly assists sugar manufacturers more or less. But it builds the sugar market up by laying the foundation for such conversation as we hear oftener than we would if we left sugar out of the apiary; something similar to the following: A lady asks the price of honey and adds: "Is this the pure, or the manufactured?" The dealer replies, "That is pure honey from Mr. Brown." "O my, I can buy sugar for 7 cents per lb., and if you want to know what Mr. Brown makes his honey out of, ask his neighbors." Such stories lose nothing by traveling and soon nearly everybody in town will not pay 15 cents for sugar when they can get it for 7. This

seems too bad just because some people think that bees cannot be wintered just as successfully on honey as with something that gives grounds for suspicion, thereby destroying the market for the genuine article.

Many of our most successful apiarists do not use sugar for winter feeding, nor any other purpose about the apiary. One, for example, is Mr. J. B. Hall of Ontario, whose colonies number several hundred. His annual crop of honey (principally comb) is counted by tens of thousands of lbs. His average loss in winter does not exceed 3 per cent. and I am quite sure if any of the bee-keepers that seem to think success hinges on feeding sugar were to offer sugar gratis, to be used in Mr. Hall's apiary, it would be refused.

Of the many thousand pounds neatly stored in Mr. Hall's honey-room last September, he says in a private letter, "I have just two one-pound sections left. I have had to refuse many orders." Mr. Hall has learned by experience that feeding sugar does not pay, as has Mr. Demaree also, who says in a recent number of the *American Apiculturist*: "I am now convinced that sugar syrup is inferior to honey for winter stores in this climate, and I want to enter my protest here against the wholesale sugar-feeding going on in the apiaries of the country." This agrees with Mr. Hall and the Editor of the BEE JOURNAL, when he says: "This sugar-feeding is undermining the honey-trade." Mr. Newman, in an editorial on page 195, says: "To avoid the appearance of evil, use honey for feeding bees."

The above shows that some of our best men are awake to the dangers of feeding sugar to bees; and let us all hope that all men of influence, may realize that fact, and use their influence in the way that is best for our pursuit.

Titusville, 30 Pa.

For the American Bee Journal.

Des Moines Co., Iowa, Convention.

The Des Moines County Bee-Keepers' Association met at the Court House in Burlington, Iowa, at 10 a. m. on April 27, 1886. The subject of wintering was discussed. Mr. Breder has a bee-house built expressly for wintering. The Secretary also has such a building. Many others winter their bees on the summer stands, and some in cellars. Some prefer to have a hive slope forward, and others to have them stand level, the latter method seeming to have the most followers.

"Which race of bees winter the best?" The general answer was, "No difference." Mr. Landeck favors the blacks because they work earlier in the morning. Mr. S. J. McKinney favors the Italians because the queen is more easily found. A vote was taken as to which bee was the best worker, and the hybrid was preferred by the majority.

Mr. Bischoff and Mr. Landeck reported drones at their apiaries. The

subject of swarming was discussed, and the majority favored natural swarming; also some claimed that there was no difference between natural swarming and dividing colonies.

Mr. Bischoff had a Shuck's invertible hive on exhibition, which attracted much attention. Winter losses were about 10 per cent. according to the reports of members.

JOHN NAU, Sec.

For the American Bee Journal.

Extensive Brood Rearing, etc.

ALLEN LATHAM.

I wintered 5 colonies of bees, and they came through the winter in fine condition; each had brood by March 1. I fed them several pounds of rye meal. We have had two weeks of nice weather here, and since Sunday, with the exception of Tuesday, the mercury has risen to 80° above zero; to-day going to 84°. This weather is the weather for bees. They have carried in a large amount of honey for this time of the year, and I believe I never saw pollen go in so fast and in such loads. I examined my bees to-day; and I found that every hive is nearly full of brood. The weak colonies have nearly the same quantity of brood as the strong; one hive, which has not more than a pint or so of bees, has about one thousand square inches of brood, or four full frames. If this weather continues they will do well, but if it does not, and a cold spell comes, there will be some chilled brood, I fear. I have not yet taken the packing from the hives (I packed my bees for the winter with shavings), and I shall leave it till May. Last March, as I examined one hive, I found a sealed queen-cell in it with a larval queen inside. The hive had a fertile queen which I saw, and also eggs and brood. What is the reason for their rearing a queen at that time of the year? Apple trees are nearly ready to bloom.

Lancaster, 2 Mass., April 23, 1886.

Convention Notices.

A cordial invitation is extended to all to attend the 8th annual meeting of the Texas State Bee-Keepers' Association, to be held at Judge W. H. Andrews' bee-farm, at McKinney, Tex., on May 5 and 6, 1886. Indications for a grand meeting grow brighter every day, and every effort will be made to render this meeting the best and largest ever held in the State. No hotel bills to pay.

B. F. CARROLL, Sec.

The next meeting of the Cortland Union Bee-Keepers' Association will be held at Cortland, N. Y., on May 11, 1886, at 10 a. m.

D. F. SHATTUCK, Sec.

The next annual meeting of the Michigan State Bee-Keepers' Association will be held in Ypsilanti, Mich., on Dec. 1 and 2, 1886.

H. D. CUTTING, Sec.

The Central Michigan Bee-Keepers' Association will meet on May 13, 1886, with Capital Grange at their Hall in North Lansing, Mich., to hold 3 sessions, viz: Forenoon, afternoon and evening. All interested in bee-culture are invited to attend and bring articles of the apiary for exhibition. For any special information address the Secretary,

E. W. WOOD, N. Lansing, Mich.

The Illinois Central Bee-Keepers' Association will hold its next meeting at Mt. Sterling, Ills., on Tuesday and Wednesday, Oct. 19 and 20, 1886.

J. M. HAMBAUGH, Sec.

Local Convention Directory.

1886. *Time and place of Meeting.*
 May 5, 6.—Texas State, at McKinney, Tex.
 B. F. Carroll, Sec., Dresden, Tex.
 May 11.—Cortland Union, at Cortland, N. Y.
 D. F. Shattuck, Sec., Homer, N. Y.
 May 18.—Central Michigan, at N. Lansing, Mich.
 E. W. Wood, Sec., N. Lansing, Mich.
 May 20.—Wis. Lake Shore Center, at Kiel, Wis.
 Ferd Zastrow, Sec., Millhome, Wis.
 May 25.—N.W. Ills. & S.W. Wis., at Pecatonica, Ill.
 J. Stewart, Sec., Rock City, Ills.
 Aug. 31.—Stark County, at Canton, O.
 Mark Thomson, Sec., Canton, O.
 Oct. 12-14.—North American, at Indianapolis, Ind.
 F. L. Dougherty, Sec., Indianapolis, Ind.
 Oct. 19, 20.—Illinois Central, at Mt. Sterling, Ills.
 J. M. Hambaugh, Sec., Spring, Ills.
 Dec. 1, 2.—Michigan State, at Ypsilanti, Mich.
 H. D. Cutting, Sec., Clinton, Mich.

In order to have this table complete, Secretaries are requested to forward full particulars of time and place of future meetings.—ED.

SELECTIONS FROM OUR LETTER BOX

Strong Nuclei.—J. F. Latham, (29-29), Cumberland, 9 Maine, on April 26, 1886, says:

My bees have wintered finely. I never had them winter better. Three nuclei colonies, with not more than a quart of bees in each, are as strong as last fall, and are building up vigorously, having been favored for a week with very warm weather, for the season.

Good Season Expected.—W. V. Whitney, Waucoma, 6 Iowa, on April 23, 1886, says:

Bees are a-booming. I put 99 colonies into the cellar on Nov. 14, 1885, and on April 9, 1886, I took 94 colonies out in good condition, except 3 that were queenless, and those I doubled up with others. The weather is warm and nice. We have not had a frost since April 8. I think that my bees have flown every day since they were taken from the cellar. Every thing bids fair for a good honey season. One colony that is on scales gained 4½ pounds yesterday.

Italianizing Bees.—W. J. Cullinan, Mt. Sterling, 10 Ills., on April 23, 1886, writes:

Having commenced the work of Italianizing my apiary, I will give my success thus far. First, I purchased a choice Italian queen, and introduced her to a full colony with success, as follows: I caught and caged the queen in the colony to which I wished to give her, leaving her caged 9 hours; at the end of that time I took her out and put my new queen in the same cage, leaving her there 24 hours. I then liberated her about 6 o'clock in the evening. On examination the next morning, I found her attending quietly to business, and apparently in

fully harmony with her large family. She has since been doing good work. Yesterday (it being the 6th day after her introduction) I took out three frames containing eggs and young larvae, and placed them in a strong colony after depriving them of their queen; crowding the bees into six Langstroth frames. I receive the AMERICAN BEE JOURNAL regularly every Wednesday, and though my subscription is not half expired, I consider I have already received more than my dollar's worth.

Beautiful Weather for Bees.—Thos. Stokes, Minesing, Ont., on April 20, 1886, writes:

We are having most beautiful weather here now, the mercury the last few days ranging from 70° to 80° in the shade. Bees have been carrying in pollen, and now they are bringing in some honey. My colonies are very healthy, and most of them are strong, after being wintered in a clamp packed with sawdust. I put the first of them away on Nov. 1, 1885, and put them out the last of March—rather early, but I was afraid of their being short of stores, as the last fall was very poor for honey. Three colonies had died from starvation, and I since have found some that were queenless, thus leaving 23 colonies from 32 put away. These are the increase from 3 colonies in the spring two years ago.

Fine Weather for Bees.—C. W. Dayton, Bradford, 6 Iowa, on April 20, 1886, says:

Since the cold weather, which ended on April 8, we have had the warmest weather (from 65° to 85° above) of any which I can remember at this time of the year. It appears like midsummer, and the bees are rolling in the pollen from morning till night. What I am afraid of is, that it will cause them to extend the brood so much that if we get a cold snap there will be a great deal that may be destroyed.

An Apology.—J. E. Pond, Jr., Foxboro, 10 Mass., writes:

Rev. Mr. Clarke arraigns myself—and justly so—on page 246. I am always desirous of keeping within the bounds of courtesy in discussion, but in the case to which Bro. Clarke refers, I frankly admit that I overstepped them. I trust that Bro. Clarke will accept my apology in the same spirit it is made, when I say to him that the words he alludes to were penned upon the impulse of the moment, as a figure of speech, without any basis therefor so far as any articles of his are concerned, and without thinking of the inference that might be drawn. All I meant to say was, that a clergyman had, without a chance to test the matter, made a very favorable criticism in favor of a theoretical question. I own up to the error, and will endeavor not to repeat it; and in this case I will say, that I have never seen

anything in Bro. Clarke's articles that does in any way show that he presumes upon the fact that he is a clergyman, to give strength to the point he argues. I might have apologized in a private letter, but I deem that an apology to be of value should be made as publicly as the offense.

Clover Mainly Killed, etc.—Ira Barber, De Kalb Junction, 8 N. Y., on April 21, 1886, writes:

The bees in this locality have wintered nicely, as a rule, and are having a lively time on the willow and soft maple, which the last few days of hot weather have rushed into bloom. The bees have no time for plundering, but go directly to work, and have all they can attend to. I finished putting out bees to-day, and I found a loss of 12½ per cent.—all my own fault, by carelessness in leaving two cellar-windows out when the bees were put in, and the cellar was closed. I have known all winter that the temperature was too low, and what the trouble was I did not know, until I took the bees out and found the windows lying on the wall. The outlook for a crop of honey is far from favorable in Northern New York. We have had but little snow here all winter, and the fields have been bare, or nearly so, all the time, so that the clover is badly killed out; and that is our main dependence for a large crop of honey.

The "October Theory."—W. Z. Hutchinson, Rogersville, 6 Mich., says:

Mr. Bittenbender seems to possess the happy faculty of drawing apparently correct conclusions from false premises. At least some of his premises appear to be false. He says: "Bees in their natural state in the woods keep themselves in the trunks of trees 4 to 6 inches thick, where the autumnal sun cannot disturb them in their October and November repose. We thwart nature's ways when we put our bees into a ¾-inch hive, and let the sun beat upon it till cold weather comes, disturbing the bee in its natural repose." This is the second theory that has been built upon the false assumption that bees in beehives, "in a state of nature," winter better than in the modern apiary or cellar. The "hibernation theory" may be true in the sense in which its author now uses the word; and I certainly agree with the author of the "October theory" in thinking it important that bees be packed early, or else put into the cellar early; but, bee-keepers, do not build your theories upon *bee-trees*.

Getting Ready to Swarm.—2—J. L. Haworth, (1-7), Georgetown, 10 Ill., on April 26, 1886, says:

I have 7 colonies of Italian bees in Langstroth hives. One colony has had drones flying for several days, and upon examination to-day I found new queen-cells about 1½ of an inch long. They have just been booming since warm weather came.

Bees Wintered Well.—Geo. W. Homer, Dubuque, Ia., on April 22, 1886, says:

My bees wintered well out-doors, the loss being 4 colonies out of 75, fall count. Their condition is fair to first-class. The weather here could not well be better than it has been for the past week, being as balmy as in June, and the bees are merry.

Nice Weather for Bees.—F. M. Taintor, Coleraine, Mass., on April 24, 1886, says:

I placed my bees on the summer stands on April 14, after a confinement of 5 months in the cellar. They wintered well, but are light in bees, owing, I think, to flying so much last fall. We have had very warm weather since I carried them out, so at present they have a fine lot of brood for this time of the year; and if this weather continues they will be all right.

Bees in nice Condition.—Wm. H. Graves, Duncan, Ills., April 24, 1886, writes:

My bees have wintered in fine condition. I had 59 colonies last fall, and now I have 58. Never since I have kept bees have I had them in as nice condition at this time of the year. They began carrying in pollen on March 16. I wintered them on the summer stands, except 4 that were in the cellar—the first that I ever wintered in a cellar, and they came through nicely. I could not help but wonder at the small amount of honey consumed. Last season was the poorest for honey I ever saw; I had only about 500 pounds from 60 colonies. We have every prospect now for a good honey season. My bees are building up rapidly.

Upward Ventilation, etc.—J. W. Johnson, McFall, Mo., on April 21, 1885, writes:

I think that I have the winter problem settled, at least to suit me. Ventilation is necessary, and upward ventilation at that, for we must keep from the bees the hot air that rises in bitter cold weather. In the fall of 1884 I put my bees up for winter—50 colonies in all—and when the next May came I had 7 colonies, and only 1 out of the 7 was very strong. When I examined them I noticed an open space in the honey-board. The upper story was just set on, and no straw nor anything else was in it. Last fall I had some 40 colonies, and when I put them in for the winter this hive was left in really a worse condition than it was the previous winter, and the colony in it came out strong again this spring; while lots of my colonies that were put up in good condition, as I thought, were dead. I now have 27 colonies of bees. I took a frame from this strong colony yesterday to build up a weak one, and it had brood in it. Upward ventilation is the best in winter, I think.

Feeding Maple Syrup, etc.—Freeman Chute, Port Burwell, Ont., on April 19, 1886, writes:

Although I have been a bee-keeper for about 30 years, yet I find that I know nothing as I ought. I commenced the winter of 1885 with 24 good colonies, and the next spring I had 1 colony. The winter just past I tried to winter 11, and came through with 8. The cause of my loss of the 3 colonies I attribute to too many frames in the hive, which did not allow the bees to cluster enough to keep up the natural warmth. The cellar I keep them in is wet, but roomy, and has not much ventilation. 1. Does the presence of vegetables injure the wintering of bees in the same room? 2. Is maple syrup good to feed bees when they are short of honey? 3. What is the occasion of bees swarming out in the spring and alighting, and if put back will come out again and act so till they perish?

[1. If the cellar is kept sweet, the presence of vegetables will not be detrimental.

2. Yes; maple syrup will answer when the bees have occasional flights.

3. They are disgusted with their quarters, short of food, or something of that kind. The causes are numerous.—ED.]

Strengthening Colonies.—D. S. Goff, Ridgefield, Ills., on April 28, 1886, says:

I have 1 weak colony of bees, and a neighbor about 10 rods away has 3 colonies, 2 of them being pretty strong ones. The 2 strong colonies have commenced to rob mine a little, and I thought it would be a good plan to strengthen them with a pound of Italians. What is the best thing I can do?

[Yes; if the queen is good. Buy a pound of bees and give them to the weak colony.—ED.]

No Loss in Wintering.—D. R. Rosebrough, Casey, Ills., on April 24, 1886, writes:

It perhaps will be remembered that last fall I stated if it was a detriment to have too many bees in the hives to winter, it would affect the wintering of my bees, for my hives were then full of young bees; but the winter is ended, spring is here, and my bees are all right. I wintered 55 colonies without loss. How is that for outdoor wintering, and in thin hives? All except one of my queens are living, and all had brood but one colony, and that was strong in bees, so I exchanged some of its frames with those of other colonies. This has been the finest week for bees that I have ever known at this time of the year. Apple, cherry, and plum trees are in full bloom. It is as safe to work with the bees now as it is in the middle of white clover bloom. I have

drones flying, and a few colonies are working in the surplus apartments. I have no weak colonies. The past is my second winter without loss.

Early Queens, etc.—N. H. Rowland, Keene, Ky., on April 26, 1886, writes:

Bees are booming. I never saw them breed up faster. Apples are in full bloom, and the weather is just right. I have already reared one lot of early queens to supply some colonies that had lost their queens through the winter. The queens were laying on April 20, and have had drones flying since March. This is the earliest I have ever reared queens. Our old friend, the AMERICAN BEE JOURNAL, still makes its weekly visits, as it has been doing for years; and though an old visitor, it is always a welcome one, for, in my opinion, it is still ahead of all others.

Breeding in the Cellar.—S. J. Youngman, Cato, Mich., April 17, 1886, writes:

Bees have wintered fairly well. I removed my own from the cellar on April 9, after a confinement of 126 days. Several of the colonies were very heavy, one having several frames of brood in all stages, from the newly laid egg to hatching bees, and no diarrhea. How does this agree with the pollen theory? One of my neighbors also had a colony wintered in a cellar, with brood in all stages, and it had drones flying on the next day after being put out. Is it common for bees to breed in dark cellars?

Bees Wintered Fairly Well.—F. H. McFarland, Charlotte, Vt., on April 26, 1886, says:

Bees have wintered fairly well here, although some have lost quite heavily. Mr. A. E. Manum called a few days since, and informed me that his bees never wintered better, having lost less than 2 per cent. of the colonies which I prepared for winter for him last fall. He has, this spring, about 700 colonies. The past week has been quite warm, and considerable pollen and some honey has been gathered. Our early honey-plants, before fruit bloom, are the willow, elm and maple.

Bees Wintered Splendidly.—Jno. Haskins, Empire Prairie, Mo., on April 27, 1886, says:

All of my bees have wintered splendidly but one colony that was queenless, I think. I wintered all of them except 2 on the summer stands without any protection, but snow that I shoveled around them, except in the fronts of the hives. The fruit trees and red-bud are in bloom.

To any One sending us one new subscriber with their own renewal (with \$2.00), we will present a copy of the new "Convention History of America."



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 BUSINESS MANAGER.

Special Notices.

To Correspondents.—It would save us much trouble, if all would be particular to give their P. O. address and name, when writing to this office. We have several letters (some inclosing money) that have no name; many others having no Post-Office, County or State. Also, if you live near one post-office and get your mail at another, be sure to give the address we have on our list.

Our New Catalogue of Bee-Keepers' Supplies for 1886 is issued, and will be sent to any one desiring a copy. Send name and address, plainly written, on a Postal Card for it.

Perforated-Zinc.—We have laid in a stock of perforated zinc, for excluding drones and queens, and can fill orders for any size of pieces or quantity at 15 cents per square foot, or in full sheets 3x8 feet at \$2.75 per sheet. We also have pieces cut to fit the Langstroth hive—19½x14½—Price 25 cents each.

The Illustrated Graphic News, an enterprising pictorial weekly, will begin May with a brighter and livelier issue than ever. Among the attractive and interesting features of the May 1st number, will be the Entry of the Apache Indians into Ft. Marion, Fla., as prisoners of the United States; a series of illustrations showing the work of the terrible cyclone in Minnesota, which laid waste two entire towns; besides many pleasing pictures. A grand May number will appear on May 8, including a magnificent double colored supplement.

Wire Nails have advanced in price, as will be seen by quotations on page 159, last column.

Our rates for two or more copies of the book, "Bees and Honey," may be found on the Book List on the second page of this paper. Also wholesale rates on all books where they are purchased "to sell again."

Alsike Clover Seed.—We can furnish Alsike Clover Seed at \$8.50 per bushel—or \$2.25 per peck. These prices will take the place of those published in our Catalogue, until further notice.

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We supply the **American Bee Journal** one year, and any of the following publications, at the prices quoted in the last column of figures. The first column gives the regular price of both. All postage prepaid.

	Price of both.	Club
The American Bee Journal	1.00	
and Gleanings in Bee-Culture.....	2.00	1.75
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The Apiculturist.....	2.00	1.75
Canadian Bee Journal.....	2.00	1.75
Texas Bee Journal.....	2.00	1.75
The 7 above-named papers	6.50	5.50
and Cook's Manual.....	2.25	2.00
Bees and Honey (Newman).....	2.00	1.75
Binder for Am. Bee Journal.....	1.75	1.60
Dzierzon's Bee-Book (cloth).....	3.00	2.00
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Convention Notices.

The Northwestern Illinois and Southwestern Wisconsin Bee-Keepers' Association will hold their next meeting at Mr. Ed Whittlesey's, 2½ miles south of Pecatonica, Ill., on May 25, 1886. J. STEWART, Sec.

The first semi-annual meeting for 1886 of the Keystone Bee-Keepers' Association will be held in the Court House at Scranton, Pa., on May 11, 1886. Two sessions will be held—at 10 a.m. and at 1:30 p.m. Officers will be elected for the ensuing year. Valuable essays will be read as follows: Production of Comb Honey, by G. M. Doolittle; Production of Extracted Honey, by L. C. Root; and Queen-Rearing and General Management, by the Dadants, and others to follow. All are cordially invited to be present.

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Advertisements.

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